channel or information which travels only between a common source and destination.--

A replacement Abstract is provided on a separate sheet attached hereto.

REMARKS

Reconsideration of this application, as amended, is respectfully requested. Claims 24-26 have been added and recite previously disclosed subject matter. See, e.g., p. 8, l.26 - p.9, l.1. No new matter has been added.

The rejection of claims 21-23 under 35 U.S.C. 101 is respectfully traversed. The rejection seems to imply that a data structure cannot be patentable subject matter. Although the undersigned recognizes that the Patent Office has adopted such a policy, it is respectfully submitted that the policy is flawed, at least with respect to the present case..

In programming, the term *data structure* refers to "a scheme for organizing related pieces of information." See, e.g., the Webopedia maintained by ZDNet, available at http://www.zdwebopedia.com/TERM/d/data_structure.html. "Schemes" are generally defined as carefully arranged and systematic programs of action for attaining some object or end; or orderly combinations of things on a definite plan or system. See, e.g., Webster's New World Dictionary, Second College Edition (1982). Thus, the plain meaning of the term data structure is a combination of related pieces of information. There can be no doubt that a "combination of things" is patentable subject matter under 35 U.S.C. 101, thus there does not appear to be any reason why a combination of related pieces of information should not be likewise patentable.

This is especially true in the case of an ATM cell, which is a combination of things designed to carry useful information between ATM devices (e.g., computer systems, switches, and the like). Rather than mere "functional descriptive material", an ATM cell is a

specific arrangement of information elements, assembled by computer processes under associated program control (as may exist, for example, in a segmentation engine). These information elements are not simply abstract ideas, they are unique sequences of bits (usually represented as electrical or sometimes optical signals) that exist within and among computer systems, with each bit sequence specifically identifying and representing an address, control information or user data information. Thus, the contents of an ATM cell are real, tangible things, and thus the cell itself (i.e., the arrangement of these things in an ordered form) should qualify as patentable subject matter.

In the present case, it is a unique ATM cell that is being claimed. This cell, unlike traditional ATM cells, is made up of a payload (again, a specific set of information elements that represent tangible things) that includes information from other, partially filled ATM cells. As explained at pp. 2-3 of the Specification, traditional ATM cells, especially those used to carry voice data and the like, are often only partly filled. That is, traditional cells often have payloads that consist of mostly padding, rather than true user data. The presently claim ATM cell, however, is one that includes the user data from these partially filled cells, along with header information (another set of unique information elements that represent tangible things) to identify how many such partially filled cells contributed to the payload of the present cell.

Because the logical underpinning of the Patent Office's policy of excluding data structures from the set of patentable subject matter seems to be unjustified, at least in the present case of a unique ATM cell, it is respectfully requested that the rejection under 35 U.S.C. 101 be withdrawn.

The objections to the specification under 35 U.S.C. 112, first paragraph, are respectfully traversed. At the outset, it should be noted that this application was previously examined by a representative of the Patent Office who found no objections with the description contained in the specification. Accordingly, it appears that there is at least disagreement within the Patent Office as to whether sufficient enablement has been

provided and, accordingly, it is submitted that the Office Action has failed to establish a prima facie case of non-enablement that would require a further response.

Nevertheless, and in an effort to advance prosecution of this application on the merits, the objections will be further addressed. The Office Action appears primarily to be concerned with the functions of the various elements depicted as block diagrams in the figures. In Figure 1, ATM end-systems A-D and switches 5 and 10 are illustrated. ATM end-systems are well-known devices and are explained in detail in well-know literature such as David E. McDysan and Darren L. Spohn, ATM Theory and Application, ch. 11, sec. 11.2, pp. 331-334 (1995) (hereinafter "McDysan"), a copy of which is included herewith. So too are ATM switches well-known components. See, e.g., McDysan at ch. 10, pp. 279-315. Because these are well-known components, no further description is needed to provide enablement to one of ordinary skill in the art.

Figure 2 illustrates conventional ATM cells (both full cells and partially filled cells) within a cell stream. Such cells are well known, for example the structure of a conventional cell is illustrated in Figure 3 of Takashima et al., U.S. Patent No. 5,509,007 ("Takashima). Takashima also illustrates a conventional cell stream at Figure 15. Thus, no further description of these components is needed.

Figure 2 also illustrates a cell merging/splitting operation. These operations are described in the specification at pp. 7-9. As indicated, the merging operation essentially involves creating a new ATM cell from the payloads and headers of partially filled ATM cells. The creation of an ATM cell from another data stream is a well-known process and usually involves the use of a segmentation engine. See, e.g., McDysan at ch. 7, pp. 197-205. As indicated, the segmentation engine carves up a data stream into cells and prefixes the cells with a header. One of ordinary skill in the art, upon review of the present disclosure, would recognize that similar processes could be used to effect the merging operation described in the specification. For example, the padding from partially filled ATM cells could be stripped and the remaining header and payload data therefrom used to

construct the payload portions of the new ATM cell, as shown graphically in Figure 2.

For the splitting operations, conventional reassembly engines (essentially the functional opposite of a segmentation engine) could be employed to reconstruct the original partially filled ATM cells from a new ATM cell constructed in the fashion described above and in the specification. Thus, one of ordinary skill in the art would recognize that conventional ATM methods and apparatus could be employed in accordance with the teachings of the present disclosure to arrive at the functionality discussed and claimed therein. Accordingly, the present disclosure is fully enabling for one of ordinary skill in the art.

Figures 3 and 4 include illustrations of ATM end-systems and switches configured to include the above-discussed splitting and merging operations. It should be clear from the above discussion that sufficient disclosure has been provided to enable one of ordinary skill in the art to employ conventional ATM processes and apparatus in accordance with the new teachings provided in the present disclosure to arrive at the claimed invention. It should be remembered that the use of block diagrams and descriptions of how their function is achieved provided sufficient enablement where the represented structures are conventional and can be determined without undue experimentation. In re Donohue, 550 F.2d 1269, 1271 (CCPA 1977). Thus, the present application is fully enabling and the objections under 35 U.S.C. 112, first paragraph, should be withdrawn.

The rejections of the claims under 35 U.S.C. 112, first paragraph, are respectfully traversed for the reasons set forth above.

The present claims are patentable over Takashima. It does appear that Takashima discloses the merging of two or more ATM cells into a new ATM cell (e.g., at Fig 15 and the accompanying description), however, there does not appear to be any teaching or suggestion of including information indicative of the merging method so used in the header of the new ATM cell as presently claimed. Instead, Takashima apparently allocates header information to indicate the number of merged cells or the data boundaries of those cells.

See, e.g., Takashima at col. 10, ll. 21-31. Accordingly, the rejections under 35 U.S.C. 102(a) have been obviated by the present amendments.
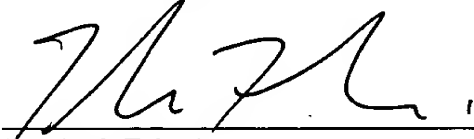
Please charge any deficiencies of fees associated with this communication to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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Tarek N. Fahmi
Reg. No.: 41,402

12400 Wilshire Boulevard
Seventh Floor
Los Angeles, CA. 90025-1026
(408) 720-8598